Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

aHD1761
.U56
No. 68

PROPERTY OF
FOOD AND NUTRITION
INFORMATION CENTER, NAL
BELTSVILLE, MARYLAND 20705

THE IMPACT OF RACE ON CONSUMER FOOD PURCHASES

Larry E. Salathe
Anthony E. Gallo
William T. Boehm

PROPERTY OF
FOOD AND NUTRITION
INFORMATION CENTER, NAL
BELTSVILLE, MARYLAND 20705

USDA, National Agricultural Library
NAL Bldg
10301 Baltimore Blvd
Beltsville, MD 20705-2351

U.S. Department of Agriculture
Economics, Statistics, and Cooperatives Service

ESCS-68

THE IMPACT OF RACE ON CONSUMER FOOD PURCHASES

Larry E. Salathe
Anthony E. Gallo
William T. Boehm

PROPERTY OF
FOOD AND NUTRITION
INFORMATION CENTER, NAL
BELTSVILLE, MARYLAND 20705

USDA, National Agricultural Library
NAL Bldg
10301 Baltimore Blvd
Beltsville, MD 20705-2351

U.S. Department of Agriculture
Economics, Statistics, and Cooperatives Service

ESCS-68

BIBLIOGRAPHIC DATA SHEET	1. Report No. ESCS-68	2.	3. Recipient's Accession No.
4. Title and Subtitle THE IMPACT OF RACE ON CONSUMER FOOD PURCHASES			5. Report Date August 1979 6.
7. Author(s) Larry E. Salathe, Anthony E. Gallo, and William T. Boehm			8. Performing Organization Rept. No. ESCS-68
9. Performing Organization Name and Address National Economics Division Economics, Statistics, and Cooperatives Service U.S. Department of Agriculture Washington, D.C. 20250			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstracts

White households spend more per week for food than Black households. White households spend more on cereal and bakery products, fruits, dairy products, sugar and other sweets, fats and oils, nonalcoholic beverages, and food away from home. Black households spend more on pork, poultry, eggs, and fish and seafood. Part of these differences in food purchase patterns can be attributed to the lower average income of Black households. However, both households still exhibit different purchasing patterns for a majority of the foods studied, after the effect of income difference is removed.

17. Key Words and Document Analysis. 17a. Descriptors

Agriculture
Cereal products
Dairy products
Economic analysis
Eggs
Food
Income
Meat
Seafood
Sugar

17b. Identifiers/Open-Ended Terms
Buying habits
Food purchase patterns
Income differences
Race

17c. COSATI Field Group 02-B, 05-C

18. Availability Statement Available from:
NATIONAL TECHNICAL INFORMATION SERVICE, 5285 Port Royal Road, Springfield, Virginia 22161.

19. Security Class (This Report) UNCLASSIFIED
20. Security Class (This Page) UNCLASSIFIED
21. No. of Pages
22. Price

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

HD9004
.S22
E.3089

C-1

CONTENTS

Summary iii

Introduction 1

Data Source 2

Food Purchasing Patterns 3

Income Response by Race 3

Food Expenditures by Race and Location of Residence 6

References 11

Appendix table 1 12

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
MAY 25 1990
CATALOGING

SUMMARY

Black households spend less per capita on food at home and food away from home than White households. They spend less on cereal and bakery products, dairy products, fresh fruits and vegetables, processed fruits, sugar and other sweets, fats and oils, nonalcoholic beverages, and miscellaneous prepared foods. However, they spend more on pork, poultry, fish and seafood, and eggs.

These differences reflect to some extent their lower average incomes. For instance, given a $10 increase in weekly income, a Black household would increase its food purchases by 70 cents, while a White household would increase food purchases only 60 cents.

Black and White households exhibit almost the same differences in their food selections, moreover, even when they receive the same incomes. When earning the same incomes as Whites, Blacks generally spend more on beef, pork, poultry, fish and seafood, but less on cereal and bakery products, dairy products, sugar and other sweets, nonalcoholic beverages, and miscellaneous prepared foods. However, Black and White households with equal incomes would increase their food purchases by the same amount if their incomes increased equally.

Generally, location of residence (region and urbanization) has little effect on the differences in food expenditures between Black and White households.

AD-33 Bookplate
(1-48)

BIBLIOGRAPHIC DATA SHEET

NATIONAL AGRICULTURAL LIBRARY

HD9004
.S22
E.3089

C-1

CONTENTS

Summary iii

Introduction 1

Data Source 2

Food Purchasing Patterns 3

Income Response by Race 3

Food Expenditures by Race and Location of Residence 6

References 11

Appendix table 1 12

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
MAY 25 1990
CATALOGING

SUMMARY

Black households spend less per capita on food at home and food away from home than White households. They spend less on cereal and bakery products, dairy products, fresh fruits and vegetables, processed fruits, sugar and other sweets, fats and oils, nonalcoholic beverages, and miscellaneous prepared foods. However, they spend more on pork, poultry, fish and seafood, and eggs.

These differences reflect to some extent their lower average incomes. For instance, given a $10 increase in weekly income, a Black household would increase its food purchases by 70 cents, while a White household would increase food purchases only 60 cents.

Black and White households exhibit almost the same differences in their food selections, moreover, even when they receive the same incomes. When earning the same incomes as Whites, Blacks generally spend more on beef, pork, poultry, fish and seafood, but less on cereal and bakery products, dairy products, sugar and other sweets, nonalcoholic beverages, and miscellaneous prepared foods. However, Black and White households with equal incomes would increase their food purchases by the same amount if their incomes increased equally.

Generally, location of residence (region and urbanization) has little effect on the differences in food expenditures between Black and White households.

The Impact of Race on Consumer Food Purchases

*Larry E. Salathe, Anthony E. Gallo, William T. Boehm**

INTRODUCTION

The population growth rate among racial groups has differed in the past and is expected to continue doing so (3). 1/ If race affects food purchases, then changes in the racial composition of the U.S. population will influence future food consumption and prices. This report analyzes the impact of race on consumer food purchases. Economists and agents within the food system will find the information useful to predict future growth in consumer demand for food resulting from changes in the racial composition of the U.S. population.

The Bureau of Labor Statistics' Consumer Price Index (CPI) is widely used as a measure of changes in the cost of living. Prices are collected on a wide variety of food and nonfood products to develop the CPI. These prices are multiplied by weights designed to reflect the purchasing patterns of a typical urban household. The weights may not reflect the purchasing patterns of various socioeconomic and demographic groups within the U.S. population because they are based on average food purchasing patterns. As a result, movements in the CPI for food may not provide meaningful indications of food-cost changes faced by those groups.

The impact of race on food expenditure patterns is especially significant to the South (as defined by the Census Bureau) and to a lesser degree, the West. Those regions are the least homogeneous in terms of racial composition. Blacks comprised about 11.5 percent of the U.S. population in 1975, but nearly one out of every two Blacks resided in the South (table 1). 2/ About one out of every five persons in the South was Black, compared with only 1 out of about 10 in the Northeast and North Central regions (4).

Minority races other than Black made up less than 1.7 percent of the population. The socioeconomic composition of this group is extremely diverse. Japanese Americans, for instance, have the highest per capita income of any socioeconomic group in the country, while American Indians have the lowest. As a result, interpretations of income and consumption data for other racial groups have less meaning than those of Blacks or Whites.

---

*The authors are agricultural economists with the Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture.

1/ Underscored numbers in parentheses refer to references listed at the end of this report.

2/ This report focuses on the difference in food purchases between Black and White households. Growth in the Hispanic population may cause changes in consumer demand for food, but no data exist on food purchases made by that racial group.

Table 1--Regional dispersion of U.S. population, by race of head of household, 1976

Region	White	Black	Other
		Percent	
Northeast	23.9	19.4	13.6
North Central	28.3	20.2	12.4
South	29.5	52.4	15.2
West	18.3	8.0	58.8
Total	100.0	100.0	100.0

Source: (4).

DATA SOURCE

Data for this analysis are primarily from the 1972-74 Bureau of Labor Statistics (BLS) Consumer Expenditure Diary Survey (CEDS). Those data are the most current and comprehensive available on household purchases. The survey, which has been taken every 10 to 12 years (1950, 1960-61, 1972-73), is the largest Government survey of its type; it covers 23,000 households. This massive data base, which took 2 years to collect, took over 4 years to prepare for public use. BLS released the data tapes for public use in 1978. ESCS, since then, has been preparing the data for analysis. The next survey will probably not be released for several years. As of January 1, 1978, the data have provided a basis for establishing expenditure weights in the Consumer Price Index.

Data collected in the 1972-74 CEDS are used to compare the food purchasing behavior of White and Black households. The Bureau of Labor Statistics classified the race of the household head into only two categories when it released the 1972-74 CEDS public-use tape. This was done to limit the possibility of disclosing individual household records. The categories were: (1) Black, and (2) White and other than Black. The ability to investigate differences in purchasing patterns between Whites and Blacks should not be adversely affected, since the racial group defined as neither Black nor White accounted for only about 1.3 percent of the total population, and about 1.4 percent of the racial group defined as White and non-Black during 1972-74. Thus, the estimated differences in expenditure patterns between Black and non-Blacks will primarily reflect differences in purchase patterns between Black and White households.

The 1972-74 CEDS data were collected in two separate 12-month periods (5). Data collected in the second survey period are used to investigate differences in food purchasing behavior between Black and White households. In the second survey, 10,298 household records contained complete data on income and food purchases. Sixty of those household records contained expenditure data that probably were not representative of their normal purchasing patterns, so they were excluded from this analysis. 3/

3/ A description of these households is presented in (1).

Black households accounted for 1,142 of the total households used in this analysis. These households had an average per capita (before-tax) income of $55.82 per week. White and non-Black households (9,096) had an average per capita (before-tax) income of $91.04 per week.

Average per capita weekly food expenditures of White (including non-Black) and Black households are presented in table 2. 4/ Statistical tests were performed to determine if these mean per capita weekly food purchases differed between the two racial groups. 5/ The statistical tests indicate that these averages are different for all food expenditure categories except beef, other red meats, and processed vegetables.

Black households, reflecting in part their lower average income, spent a larger share of their income on food than White households. Black households spent an average of $11.67 per person per week (20.9 percent of their income) on food. On the other hand, White households spent an average of $14.32 per person per week (15.7 percent of their income) on food. Black households spent less on both food at home and food eaten away from home.

Race also appears to affect the allocation of the food-at-home dollar. Black households had larger per capita purchases of pork, poultry, fish and seafood, and eggs than did White households, but they had significantly lower average per capita purchases of the remaining food groups except beef, other red meats, and processed vegetables.

FOOD PURCHASING PATTERNS

Differences in food purchasing behavior may be attributable to differences in income or location of residence (region and urbanization) between White and Black households, so the effects of income and residence on food purchase behavior were isolated by estimating separate econometric models for each racial group. The models expressed per capita weekly food expenditures as a function of per capita weekly income, per capita weekly income squared, and a series of 0 to 1 dummy variables defining the household's location of residence.

The econometric model for each racial group was estimated using ordinary least squares regression. The estimated multiple regression parameters are presented in appendix table 1. A statistical (Chow) test was performed on each food group to determine whether the regression parameters differed between the two racial groups. 6/ Equality of the regression parameters was rejected for all items except total food at home, other red meats, fresh and processed fruits, fresh and processed vegetables, and fats and oils. 7/ The differences in the food purchasing behavior between Black and White households for the remaining food groups may be due to differences in the manner additional income (income response) is spent.

Income Response by Race

Marginal propensities to spend were calculated for each racial group to determine if White and Black household food expenditure-income responses are different. These

4/ White household hereafter refers to both White and non-Black households.
5/ Background information on this test is given in (6, p. 156).
6/ See (2) for information regarding this test.
7/ A 99-percent level of confidence was used to determine whether the regression parameters were significantly different between Black and White households.

Table 2--Average weekly per capita food purchases by race of head of households used in the analysis

Item	White 1/	Black 2/
	Dollars	
Total food	14.32	11.67*
Food at home	10.09	9.47*
Beef	1.42	1.29
Cereal and bakery products	1.21	1.02*
Dairy products	1.40	.97*
Eggs	.27	.33*
Fats and oils	.31	.26*
Fish and seafood	.27	.38*
Fresh fruits	.41	.33*
Fresh vegetables	.48	.44*
Miscellaneous prepared foods, condiments, and seasonings	.83	.53*
Nonalcoholic beverages	.76	.63*
Other red meats	.46	.46
Pork	.84	1.29*
Poultry	.47	.77*
Processed fruits	.32	.24*
Processed vegetables	.33	.33
Sugar and other sweets	.31	.20*
Food away from home	4.23	2.20*

1/ White includes White and non-Black households
2/ Asterisk indicates that means are different between Black and White households at the 99-percent confidence level.

marginal propensities to spend measure the change in food purchases resulting from a $1 increase in household income. These marginal propensities to spend vary with household income, and Black households had considerably lower average incomes than White households, so the marginal propensities to spend were computed at the average per capita income of all households in the sample. They were also computed at the average per capita income of each racial group. The estimated marginal propensities are presented in table 3.

The marginal propensity to spend on total food was an average of 0.07 for Black households and 0.06 for White households. Thus, a Black household with a $10 increase in weekly income would increase its food purchases by 70 cents: 24 cents in at-home food purchases and 46 cents in away-from-home food purchases. An average White household with the same increase in income would increase total food purchases by 60 cents: 17 cents in at-home food purchases and 43 cents in away-from-home food purchases.

The higher marginal propensity to spend on total food for Black households seems to reflect their lower incomes. The marginal propensity to spend on total food for both racial groups was 0.06 when the marginal propensity to spend on total food for each racial group was computed at the average income of all households used in the analysis. The difference in the marginal propensity to spend on food at home also diminished considerably. However, the difference in the marginal propensity to spend

Table 3--Estimated marginal propensities to spend, by race of head of household

Item	Estimated at sample means for all households		Estimated at sample means for each race	
	White	Black	White	Black
Total food	0.06024	0.06043	0.06000	0.07029
Food at home	.01736	.02077	.01727	.02413
Beef	.00406	.00731	.00404	.00851
Cereal and bakery products	.00085	.00051	.00085	.00043
Dairy products	.00152	.00137	.00151	.00183
Eggs	.00001	.00048	.00001	.00049
Fats and oils	.00015	.00051	.00015	.00053
Fish and seafood	.00106	.00074	.00106	.00078
Fresh fruits	.00116	.00090	.00115	.00115
Fresh vegetables	.00110	.00066	.00109	.00085
Miscellaneous prepared foods	.00191	.00144	.00190	.00160
Nonalcoholic beverages	.00149	.00181	.00148	.00198
Other red meats	.00070	.00021	.00070	.00019
Pork	.00136	.00288	.00135	.00323
Poultry	.00028	.00076	.00028	.00126
Processed fruits	.00087	.00094	.00087	.00113
Processed vegetables	.00047	.00051	.00047	.00038
Sugar and other sweets	.00040	-.00022	.00039	-.00016
Food away from home	.04288	.03966	.04273	.04616

on food away from home diminished only slightly. Given the same income, Black households had a lower marginal propensity to spend on food away from home than White households.

The marginal propensities to spend on fats and oils, beef, pork, and poultry were considerably larger for Black than for White households. However, the marginal propensities to spend on cereal and bakery products, fish and seafood, and sugar and sweets were considerably lower for Black than for White households. These differences did not diminish appreciably when the marginal propensities to spend were evaluated at the average per capita income level of all households used in the analysis.

Expenditure-income elasticities calculated at the mean per capita income and expenditures of all households and for each racial group are presented in table 4. These elasticities measure the percentage change in household food expenditures resulting from a 1-percent change in household income.

The total food expenditure-income elasticity was 0.337 for an average Black household and 0.381 for an average White household. The food-at-home expenditure-income elasticity was slightly lower for an average Black household, but the food-away-from-home expenditure-income elasticity was substantially higher. When these elasticities were computed at the average per capita income of all households, Black households had a somewhat higher food-at-home income elasticity, but a somewhat lower food-away-from-home income elasticity. Major differences existed in the expenditure-income elasticities for beef, poultry, eggs, sugar and sweets, and fats and oils. These differences did not diminish considerably even when the elasticities were computed at the average per capita income and expenditures for all households.

Tables 3 and 4 generally indicate that the income-expenditure responses of Black and White households differ considerably. However, these comparisons ignore the uncertainty or degree of error surrounding the multiple-regression parameters. A series of statistical tests were conducted to determine whether the income-expenditure response can be judged statistically different, after considering the error surrounding these parameters. These statistical (Chow) tests were used to determine whether the coefficients of per capita income and per capita income squared are different for Black and White households for each food-expenditure category. The results of these tests indicate that for all items except total food, food away from home, beef, and poultry, the equality of income coefficients could not be rejected. 8/ Thus, the differences in the expenditure-income elasticities and the marginal propensities to spend probably cannot be attributed to racial differences in food purchasing behavior for the remaining food groups.

Food Expenditures by Race and Location of Residence

Parameter estimates in appendix table 1 were used to estimate food expenditures for each racial group depending on the household's location. Both racial groups were assumed in these calculations to have a per capita income equal to that of all households used in the analysis. Estimated weekly per capita food expenditures by Black and White households in each location are presented in table 5.

The estimated weekly per capita food expenditure for a White household in the urban West was $14.34, compared with $13.47 for a Black household from the same location. Per capita weekly food expenditures of Black households averaged $2.65 less than that of White households before adjusting for differences in their per capita incomes (table 2). Thus, differences in income explain most of the observed difference in total food expenditures between Black and White households. Given the same

8/ A confidence level of 0.95 was used as the rejection criterion.

Table 4--Estimated expenditure-income elasticities, by race of head of household

Item	Estimated at sample means for all households		Estimated at sample means for each race	
	White	Black	White	Black
Total food	0.374	0.375	0.381	0.337
Food at home	.151	.181	.156	.142
Beef	.251	.453	.259	.367
Cereal and bakery products	.062	.037	.064	.023
Dairy products	.097	.088	.098	.105
Eggs	.004	.149	.005	.082
Fats and oils	.042	.147	.043	.117
Fish and seafood	.325	.227	.355	.115
Fresh fruits	.252	.197	.256	.194
Fresh vegetables	.200	.120	.206	.108
Miscellaneous prepared foods	.208	.158	.208	.168
Nonalcoholic beverages	.174	.211	.177	.177
Other red meats	.134	.039	.139	.023
Pork	.133	.281	.146	.140
Poultry	.049	.132	.055	.091
Processed fruits	.244	.262	.246	.264
Processed vegetables	.125	.134	.130	.065
Sugar and other sweets	.119	-.065	.118	-.043
Food away from home	.933	.863	.920	1.169

Table 5--Weekly per capita food expenditures, by race of head of household and location of residence

Location	Total food		Food at home		Beef		Cereal and bakery products		Dairy products		Eggs		Fats and oils	
	White	Black	White	Black	White	Black	White	Black	White	Black	White	Black	White	Black
	Dollars													
Urban West	1/14.34	13.47	9.71	9.48	1.37	1.79	1.13	0.89	1.41	1.06	0.27	0.28	0.30	0.25
Urban Northeast	15.94	16.70	11.48	12.24	1.75	1.76	1.36	1.22	1.57	1.16	.28	.42	.30	.27
Urban North Central	13.64	13.89	9.63	10.37	1.36	1.83	1.16	.91	1.37	1.09	.23	.35	.30	.26
Urban South	14.42	13.97	9.95	10.20	1.42	1.46	1.16	1.04	1.35	1.03	.29	.37	.31	.27
Rural West	12.93	11.88	9.45	8.00	1.10	1.57	1.18	.83	1.40	.89	.29	.17	.36	.33
Rural Northeast	14.53	15.10	11.22	10.76	1.48	1.54	1.41	1.16	1.56	.99	.30	.31	.36	.35
Rural North Central	12.23	12.30	9.37	8.89	1.09	1.61	1.21	.85	1.36	.92	.25	.24	.36	.34
Rural South	13.01	12.38	9.69	8.72	1.15	1.24	1.21	.98	1.34	.86	.31	.26	.37	.35

	Fish and seafood		Fresh fruits		Fresh vegetables		Miscellaneous prepared foods		Nonalcoholic beverages		Other red meats		Pork	
	White	Black	White	Black	White	Black	White	Black	White	Black	White	Black	White	Black
	Dollars													
Urban West	0.26	0.35	0.42	0.39	0.49	0.46	0.87	0.59	0.70	0.59	0.38	0.48	0.75	1.04
Urban Northeast	.43	.63	.51	.53	.59	.54	.83	.69	.83	.86	.65	.61	.83	1.54
Urban North Central	.20	.35	.40	.39	.44	.51	.85	.60	.73	.74	.47	.45	.88	1.37
Urban South	.28	.43	.34	.35	.48	.46	.78	.58	.80	.67	.40	.45	.90	1.46
Rural West	.21	.21	.40	.30	.43	.37	.88	.45	.70	.52	.34	.37	.76	.84
Rural Northeast	.38	.49	.49	.44	.53	.45	.84	.55	.83	.79	.61	.50	.84	1.34
Rural North Central	.15	.21	.38	.30	.38	.42	.86	.46	.73	.67	.43	.34	.89	1.17
Rural South	.23	.29	.32	.26	.42	.37	.79	.44	.80	.60	.36	.34	.91	1.26

	Poultry		Processed fruits		Processed vegetables		Sugar and other sweets		Food away from home	
	White	Black	White	Black	White	Black	White	Black	White	Black
	Dollars									
Urban West	0.44	0.55	0.34	0.30	0.31	0.29	0.30	0.21	4.63	3.99
Urban Northeast	.60	1.06	.38	.36	.33	.40	.29	.23	4.46	4.46
Urban North Central	.37	.78	.29	.26	.30	.34	.31	.17	4.01	3.52
Urban South	.50	.87	.31	.26	.36	.35	.29	.21	4.47	3.77
Rural West	.40	.41	.33	.30	.29	.24	.40	.22	3.48	3.88
Rural Northeast	.56	.92	.37	.36	.31	.35	.39	.24	3.31	4.34
Rural North Central	.33	.64	.28	.26	.28	.29	.41	.18	2.86	3.41
Rural South	.46	.73	.30	.26	.34	.30	.39	.22	3.32	3.66

1/ Both White and Black households are assumed to have an average per capita weekly income of $87.11

per capita income, per capita weekly food expenditures by Black households residing in the urban West and urban South were 87 and 45 cents less, respectively, than their White counterparts. However, Black households in the urban North Central and urban Northeast regions spent 25 and 76 cents more per person per week on total food, respectively, than similar White households.

Per capita weekly at-home food purchases by Black households averaged 62 cents less than that of White households before adjusting for differences in their incomes. Per capita weekly at-home food purchases of Black households residing in the urban North Central, urban South, and urban Northeast were 74, 25, and 76 cents more, respectively, than for their White counterparts after adjusting for differences in their incomes.

Cereal and bakery product purchases were lower for Black households than for White households even after adjusting for income differences. Per capita weekly purchases of this food group ranged from 12 to 36 cents lower for Black households, depending upon household location.

Per capita weekly beef purchases by Black households averaged $1.29, compared with $1.42 for White households before adjusting for income differences. Black households were found to spend more on beef than their White counterparts after controlling for income differences. Major differences in beef purchases existed between Black and White households located in the West and North Central regions, with Black households spending about 50 cents more per person per week on beef than their White counterparts.

Pork purchases were higher for Black households than for similar White households. Holding income constant, Black households spent from 8 to 67 cents more per person per week on pork than their White counterparts, depending on the household's location.

Per capita weekly poultry purchases averaged 30 cents more for Black households, and remained higher after adjusting for differences in incomes. Per capita weekly poultry purchases by a Black household in the urban Northeast were 46 cents higher than for its White counterpart, the greatest difference among all locations.

Fish and seafood purchases remained higher for Black than for White households even after controlling for differences in incomes. Purchases by urban Black households were considerably above those by urban White households. Fish purchases by rural Black households were only moderately above those by their rural White counterparts.

Per capita weekly egg expenditures averaged 27 cents for White households and 33 cents for Black households. Controlling for differences in incomes indicates that rural Black and White household egg purchases are very similar except for households located in the rural West. Urban Black households spent from 1 to 14 cents more per person per week on eggs than their urban White counterparts.

Large differences in dairy-product purchases existed between Black and White households. Holding income constant, per capita weekly dairy-product expenditures by Black households ranged from 32 cents less than White households in the urban South to 57 cents less in the rural Northeast.

Average per capita weekly expenditures for fresh fruits, fresh vegetables, and processed fruits were significantly lower for Black households than for White households before adjusting for differences in incomes. Generally, average expenditures on these food groups vary only slightly between Black and White households after controlling for differences in incomes.

Per capita weekly expenditures on sugar and other sweets remained higher for White than for Black households even when both households had the same income. Per capita weekly expenditures on this food group ranged from 6 to 23 cents higher for Whites than for their Black counterparts, depending on the household location.

Only minor differences existed in per capita weekly expenditures on fats and oils by racial group. Per capita weekly expenditures on fats and oils by Black households ranged from 1 cent to 5 cents lower, after controlling for differences in incomes.

Black households located in the urban Northeast and urban North Central were the only ones to spend more on nonalcoholic beverages than their White counterparts, given the same income. All other Black households spent from 4 to 20 cents less per person per week on nonalcoholic beverages than similar White households.

Per capita weekly expenditures for miscellaneous prepared foods were higher for White than for similar Black households, ranging from 16 cents more in the urban Northeast to 43 cents more in the rural West.

Per capita weekly away-from-home food purchases averaged $2.03 less for Black households than for White households. Much of this difference can be explained by differences in their incomes. Given the same income, per capita weekly away-from-home food purchases by urban Black households ranged from the same as urban White households in the Northeast to 70 cents less in the South. Per capita weekly expenditures on food away from home by rural Black households ranged from 34 cents to $1.03 more than for rural White households.

The effect of region and urbanization on food-purchase decisions seems to differ considerably between White and Black households. The results in table 5, however, ignore the degree of uncertainty surrounding the parameter estimates. Statistical (Chow) tests were conducted to determine whether region and urbanization affect Black and White household food purchases differently. The results of these statistical tests suggest that equality of the region and urbanization coefficients for Black and White households cannot be rejected except for beef, poultry, eggs, and nonalcoholic beverages. 9/ These results indicate that the difference in expenditures between Black and White households for the remaining items does not change significantly by household location.

9/ A confidence level of 0.95 was used as the rejection criterion.

REFERENCES

(1) Buse, Rueben C., Jitendar S. Mann, and Larry E. Salathe. Data Problems in the 1972-74 BLS Diary Survey Public Use Tapes. Agr. Econ. Staff Paper No. 152, Dept. of Agr. Econ., Univ. Wis., Madison, Wis., Oct. 1978.

(2) Chow, G. C. "Tests for Equality Between Sets of Coefficients in Two Linear Regressions," Econometrica. 28(1960):591-605.

(3) U.S. Department of Commerce, Bureau of the Census. "Projections of the Population of the U.S.: 1975 to 2050," Current Population Reports. Series P-25, No. 601. U.S. Govt. Print. Off., 1975.

(4) _____. Statistical Abstract of the U.S.: 1977 (98th edition). U.S. Govt. Print. Off., 1977.

(5) U.S. Department of Labor, Bureau of Labor Statistics. Consumer Expenditure Survey: Diary Survey, July 1972-June 1974. Bulletin No. 1959, U.S. Govt. Print. Off., 1977.

(6) Wonnacott, Thomas H., and Ronald J. Wonnacott. Introductory Statistics. New York, N.Y.: John Wiley and Sons, Inc., 1969.

Appendix table 1--Estimated weekly per capita food expenditure equations, by race of head of household 1/

Independent variable 2/	Total food			Food at home			Cereal and bakery products			Beef		
	All	White	Black	All	White	Black	All	White	Black	All	White	Black
Intercept	7.3575	7.4410	5.4193	7.6869*	7.8403	5.7777	1.0855*	1.1036	0.8004	0.7164	0.7307	0.7955
	2/(23.63)	(22.75)	(4.87)	(33.09)	(32.90)	(5.72)	(31.55)	(30.62)	(6.38)	(10.50)	(10.72)	(2.33)
URBN	1.4024	1.4119	1.5873	.3773	.2608	1.4831	-.0512	-.0461	.0648	.2750	.2664	.2213
	(5.94)	(5.65)	(2.10)	(2.14)	(1.43)	(2.16)	(-1.96)	(-1.67)	(.76)	(5.32)	(5.11)	(.96)
NE	1.6874	1.5983	3.2326	1.8398	1.7728	2.7640	.2354	.2333	.3347	.3545	.3766	-.0347
	(6.37)	(5.78)	(3.34)	(9.32)	(8.80)	(3.15)	(8.05)	(7.65)	(3.07)	(6.11)	(5.53)	(-.12)
NC	-.6662	-.6969	.4248	-.0091	-.0816	.8905	.0222	.0304	.0209	.0061	-.0096	.0383
	(-2.67)	(-2.67)	(.46)	(-.05)	(-.43)	(1.07)	(.80)	(1.06)	(.20)	(.11)	(-.18)	(.14)
SOUTH	-.0463	.0839	.5026	.2261	.2439	.7260	.0189	.0310	.1476	.0145	.0538	-.3320
	(-.19)	(.32)	(.59)	(1.23)	(1.26)	(.94)	(.69)	(1.06)	(1.54)	(.27)	(.97)	(-1.28)
PCINCOM*10	.6640*	.6586	.8788	.2005	.1966	.3013	.0115	.0102	.0028	.0476*	.0445	.1067
	(32.66)	(30.49)	(9.05)	(13.22)	(12.50)	(3.42)	(5.16)	(4.27)	(.26)	(10.68)	(9.90)	(3.58)
$SQPCINC*10^4$	-.3344*	-.3226	-1.5758	-.1382	-.1315	-.5371	-.0111	-.0096	.0130	-.0268*	-.0225	-.1931
	(-8.85)	(-8.25)	(-4.47)	(-4.90)	(-4.62)	(-1.68)	(-2.66)	(-2.22)	(.33)	(-3.24)	(-2.76)	(-1.79)
R^2 3/	.19	.19	.15	.04	.04	.04	.01	.01	.01	.03	.03	.03

	Pork			Other red meats			Poultry			Fish and seafood		
	All	White	Black	All	White	Black	All	White	Black	All	White	Black
Intercept	0.6201	0.6266	0.5542	0.2813	0.2748	0.3534	0.3773	0.3797	0.2763	0.1092	0.1062	0.1318
	(12.58)	(12.45)	(2.62)	(11.48)	(10.94)	(3.29)	(12.06)	(12.17)	(1.81)	(4.89)	(5.09)	(.94)
URBN	.0475	-.0059	.2016	.0428	.0351	.1100	.0703	.0365	.1414	.0688	.0514	.1356
	(1.27)	(-.15)	(1.41)	(2.30)	(1.83)	(1.51)	(2.97)	(1.53)	(1.36)	(4.07)	(3.23)	(1.43)
NE	.1162*	.0770	.4962	.2590	.2667	.1335	.1834*	.1552	.5076	.1773	.1666	.2806
	(2.77)	(1.81)	(2.70)	(12.43)	(12.55)	(1.43)	(6.90)	(5.88)	(3.82)	(9.35)	(9.45)	(2.31)
NC	.1597	.1314	.3340	.0867	.0927	-.0283	-.0469*	-.0729	.2312	-.0500	-.0580	-.0039
	(4.04)	(3.27)	(1.92)	(4.41)	(4.63)	(-.32)	(-1.79)	(-2.93)	(1.83)	(-2.80)	(-3.49)	(-.03)
SOUTH	.2308	.1508	.4243	.0262	.0200	-.0321	.1142*	.0590	.3176	.0445	.0220	.0797
	(5.89)	(3.69)	(2.64)	(1.35)	(.98)	(-.39)	(4.59)	(2.33)	(2.73)	(2.51)	(1.30)	(.75)
PCINCOM*10	.0127	.0164	.0386	.0065	.0075	.0016	-.0011	.0029	.0216	.0102	.0120	.0085
	(3.96)	(4.94)	(2.10)	(4.08)	(4.53)	(.17)	(-.05)	(1.43)	(1.62)	(6.99)	(8.75)	(.70)
$SQPCINC*10^4$	-.0120	-.0159	-.0563	-.0014	-.0026	.0027	.0025*	-.0006	-.0806	-.0057	-.0078	-.0061
	(-2.01)	(-2.65)	(-.84)	(-.48)	(-.85)	(.08)	(.66)	(-.17)	(-1.66)	(-2.10)	(-3.12)	(-.14)
R^2	.01	.01	.02	.02	.03	.01	.01	.01	.02	.03	.04	.01

See footnotes at end of table.

Continued--

Appendix table 1--Estimated weekly per capita food expenditure equations, by race of head of household 1/--Continued

Independent variable 2/	Eggs			Dairy products			Fresh fruits			Fresh vegetables		
	All	White	Black	All	White	Black	All	White	Black	All	White	Black
Intercept	0.2780*	0.2929	0.1233	1.2139*	1.2493	0.7144	0.2877	0.2921	0.1876	0.3270	0.3281	0.2899
	(20.60)	(21.48)	(1.95)	(31.31)	(30.88)	(5.05)	(13.93)	(13.34)	(2.80)	(15.70)	(15.16)	(3.51)
URBN	-.0019*	-.0178	.1111	-.0066	.0056	.1682	.0251	.0206	.0887	.0611	.0579	.0867
	(-.18)	(-1.71)	(2.59)	(-.23)	(.18)	(1.75)	(1.60)	(1.23)	(1.95)	(3.87)	(3.50)	(1.54)
NE	.0160*	.0051	.1438	.1507	.1649	.1004	.0962	.0939	.1414	.0980	.1005	.0847
	(1.40)	(.44)	(2.62)	(4.57)	(4.82)	(.82)	(5.48)	(5.07)	(2.43)	(5.54)	(5.49)	(1.18)
NC	-.0265*	-.0367	.0707	-.0439	-.0370	.0319	-.0227	-.0225	-.0037	-.0398	-.0469	.0542
	(-2.45)	(-3.37)	(1.36)	(-1.41)	(-1.15)	(.27)	(-1.37)	(-1.29)	(-.07)	(-2.38)	(-2.71)	(.79)
SOUTH	.0277	.0204	.0877	-.1095	-.0584	-.0288	-.0824	-.0831	-.0402	-.0100	-.0072	-.0012
	(2.59)	(1.85)	(1.82)	(-3.56)	(-1.78)	(-.27)	(-5.02)	(-4.68)	(-.79)	(-.60)	(-.41)	(-.02)
PCINCOM*10	-.0004	-.0004	.0050	.0209	.0171	.0264	.0132	.0133	.0159	.0117	.0121	.0118
	(-.46)	(-.46)	(.91)	(8.26)	(6.42)	(2.14)	(9.77)	(9.23)	(2.74)	(8.58)	(8.44)	(1.63)
$SQPCINC*10^4$	.0030	.0030	-.0009	-.0156	-.0111	-.0730	-.0099	-.0100	-.0395	-.0062	-.0065	-.0299
	(1.80)	(1.86)	(-.04)	(-3.33)	(-2.29)	(-1.63)	(-3.97)	(-3.82)	(-1.86)	(-2.45)	(-2.53)	(-1.14)
R^2 3/	.01	.01	.01	.02	.01	.01	.03	.03	.04	.02	.02	.01

	Processed fruits			Processed vegetables			Sugar and other sweets			Fats and oils		
	All	White	Black	All	White	Black	All	White	Black	All	White	Black
Intercept	0.2421	0.2446	0.1962	0.2459	0.2517	0.2069	0.3510	0.3576	0.2273	0.3433	0.3488	0.2842
	(13.69)	(12.99)	(3.59)	(15.29)	(15.17)	(3.07)	(20.18)	(19.20)	(4.78)	(21.67)	(21.49)	(4.10)
URBN	.0089	.0134	-.0049	.0250	.0225	.0462	-.1037	-.1041	-.0098	-.0672	-.0618	-.0848
	(.66)	(.93)	(-.13)	(2.06)	(1.76)	(1.01)	(-7.87)	(-7.31)	(-.30)	(-5.60)	(-4.99)	(-1.80)
NE	.0371	.0364	.0620	.0301	.0237	.1118	-.0107	.0110	.0201	-.0004	-.0006	.0186
	(2.47)	(2.29)	(1.31)	(2.20)	(1.69)	(1.91)	(-.72)	(-.70)	(.49)	(-.03)	(-.05)	(.31)
NC	-.0485	-.0472	-.0364	-.0070	-.0123	.0537	-.0010	.0056	-.0401	-.0045	-.0036	.0108
	(-3.42)	(-3.14)	(-.81)	(-.54)	(-.93)	(.96)	(-.07)	(.38)	(-1.02)	(-.35)	(-.28)	(.19)
SOUTH	-.0415	-.0336	-.0356	.0496	.0534	.0565	-.0183	-.0074	-.0009	.0017	.0091	.0193
	(-2.96)	(-2.20)	(-.86)	(3.88)	(3.97)	(1.10)	(-1.33)	(-.49)	(-.03)	(.13)	(.69)	(.37)
PCINCOM*10	.0104	.0099	.0146	.0054	.0052	.0015	.0055	.0052	-.0005	.0024	.0015	.0057
	(9.01)	(7.93)	(3.07)	(5.16)	(4.76)	(.26)	(4.84)	(4.20)	(-.11)	(2.35)	(1.39)	(.94)
$SQPCINC*10^4$	-.0075	-.0068	-.0299	-.0028	-.0027	.0205	-.0073	-.0069	-.0097	-.0011	-.0001	-.0032
	(-3.50)	(-3.02)	(-1.73)	(-1.45)	(-1.35)	(.96)	(-3.47)	(-3.11)	(-.65)	(-.59)	(-.03)	(-.15)
R^2	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01

See footnotes at end of table.

Continued--

Appendix table 1--Estimated weekly per capita food expenditure equations, by race of head of household 1/--Continued

Independent variable 2/	Nonalcoholic beverages			Miscellaneous prepared foods			Food away from home		
	All	White	Black	All	White	Black	All	White	Black
Intercept	0.5394*	0.5596	0.3373	0.6792*	0.7046	0.3048	-0.3209	-0.3989	-.3582
	(18.83)	(18.61)	(3.27)	(19.95)	(19.54)	(2.81)	(-1.59)	(-1.78)	(-.71)
URBN	.0023	.0014	.0710	-.0170	-.0120	.1391	1.0252	1.1512	.1041
	(.11)	(.06)	(1.01)	(-.66)	(-.44)	(1.89)	(6.52)	(6.74)	(.30)
NE	.1368	.1282	.2709	-.0352	-.0391	.1031	-.1525	-.1745	.4688
	(5.62)	(5.04)	(3.02)	(-1.22)	(-1.28)	(1.08)	(-.86)	(-.92)	(1.06)
NC	.0336	.0268	.1495	-.0281	-.0213	.0094	-.6571	-.6152	-.4655
	(1.46)	(1.12)	(1.76)	(-1.03)	(-.74)	(.11)	(-3.95)	(-3.45)	(-1.11)
SOUTH	.0743	.1000	.0759	-.1141	-.0854	-.0098	-.2724	-.1601	-.2232
	(3.26)	(4.10)	(.97)	(-4.22)	(-2.92)	(-.12)	(-1.65)	(-.88)	(-.58)
PCINCOM*10	.0194	.0177	.0229	.0240	.0219	.0188	.4635	.4621	.5776
	(10.37)	(8.92)	(2.55)	(10.80)	(9.21)	(1.99)	(34.21)	(31.29)	(13.07)
$SQPCINC*10^4$	-.0180	-.0160	-.0274	-.0185	-.0160	-.0250	-.1963*	-.1911	-1.0390
	(-5.17)	(-4.44)	(-.84)	(-4.47)	(-3.72)	(-.73)	(-7.79)	(-7.15)	(-6.47)
R^2 3/	.02	.02	.03	.02	.02	.02	.22	.21	.22

1/ Numbers in parentheses denote t-values. Asterisk denotes coefficients that were significantly different between White and Blacks at the 0.95 confidence level.

2/ Definition of independent variables; URBN--Equals 1 if household resides in an urban location, 0 otherwise; NE--Equals 1 if household resides in the Northeast region, 0 otherwise; NC--Equals 1 if household resides in the North Central region, 0 otherwise; S--Equals 1 if household resides in the Southern region, 0 otherwise; PCINCOM--Weekly (before tax) money income of household divided by household size; SQPCINC--Weekly (before tax) money income of household divided by household size quantity squared.

3/ Denotes coefficient of determination.

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101
THIRD CLASS

5799 UNF&NI304A422 03024 0001
USDA NAL FOOD & NUTR INF CEN-
TER
RM 304
BELTSVILLE MD 20012

NATIONAL AGRICULTURAL LIBRARY
1022279124

E-3089 c-1

* NATIONAL AGRICULTURAL LIBRARY
1022279124